

sequence.txt
SEQUENCE LISTING

<110> Agriculture Victoria Services Pty Ltd
AgResearch Limited

<120> Chalcone synthase dihydroflavonol 4-reductase and
leucoanthocyanidine reductase from clover, medic ryegrass or
fescue

<130> M80937719:DLT:c1

<140> US 10/552,857

<141> 2005-10-14

<150> 2003901797

<151> 2003-04-14

<150> 2003904369

<151> 2003-08-14

<160> 77

<170> PatentIn version 3.3

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<211> 1447
<212> DNA
<213> Trifolium repens

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sequence.txt

<210> 2
<211> 389
<212> PRT
<213> *Trifolium repens*

<400> 2
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Ala Thr Ile Leu Ala Ile Gly Thr Ala Asn Pro Pro Asn Arg Val Glu
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Gln Ser Thr Tyr Pro Asp Phe Tyr Phe Lys Ile Thr Asn Ser Glu His
35 40 45

Lys Thr Glu Leu Lys Glu Lys Phe Gln Arg Met Cys Asp Lys Ser Met
50 55 60

Ile Lys Ser Arg Tyr Met Tyr Leu Thr Glu Glu Ile Leu Lys Glu Asn
 65 70 75 80

Pro Ser Leu Cys Glu Tyr Met Ala Pro Ser Leu Asp Ala Arg Gln Asp
85 90 95

Met Val Val Val Glu Val Pro Arg Leu Gly Lys Glu Ala Ala Ala Val Lys
100 105 110

Ala Ile Lys Glu Trp Gly Gln Pro Lys Ser Lys Ile Thr His Leu Ile
115 120 125

Phe Cys Thr Thr Ser Gly Val Asp Met Pro Gly Ala Asp Tyr Gln Leu
 130 135 140

Thr Lys Leu Leu Gly Leu Arg Pro Tyr Val Lys Arg Tyr Met Met Tyr
 145 150 155 160

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Gln Gln Gly Cys Phe Ala Gly Gly Thr Val Leu Arg Leu Ala Lys Asp
165 170 175

Leu Ala Glu Asn Asn Lys Gly Ala Arg Val Leu Val Val Cys Ser Glu
180 185 190

Val Thr Ala Val Thr Phe Arg Gly Pro Ser Asp Thr His Leu Asp Ser
195 200 205

Leu Val Gly Gln Ala Leu Phe Gly Asp Gly Ala Ala Ala Leu Ile Val
210 215 220

Gly Ser Asp Pro Val Pro Glu Ile Glu Lys Pro Ile Phe Glu Met Val
225 230 235 240

Trp Thr Ala Gln Thr Ile Ala Pro Asp Ser Glu Gly Ala Ile Asp Gly
245 250 255

His Leu Arg Glu Ala Gly Leu Thr Phe His Leu Leu Lys Asp Val Pro
260 265 270

Gly Ile Val Ser Lys Asn Ile Asn Lys Ala Leu Val Glu Ala Phe Gln
275 280 285

Pro Leu Gly Ile Ser Asp Tyr Asn Ser Ile Phe Trp Ile Ala His Pro
290 295 300

Gly Gly Pro Ala Ile Leu Asp Gln Val Glu Gln Lys Leu Ala Leu Lys
305 310 315 320

Pro Glu Lys Met Arg Ala Thr Arg Glu Val Leu Ser Glu Tyr Gly Asn
325 330 335

Met Ser Ser Ala Cys Val Leu Phe Ile Leu Asp Glu Met Arg Lys Lys
340 345 350

Ser Ala Gln Asn Gly Leu Lys Thr Thr Gly Glu Gly Leu Asp Trp Gly
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sequence.txt

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sequence.txt

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<212> PRT
<213> Trifolium repens

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Val Met Gln Glu Cys Leu Val Asp Gly Tyr Phe Arg Asp Thr Asn Cys
35 40 45

Asp Asn Pro Glu Leu Lys Gln Lys Leu Ala Arg Leu Cys Lys Thr Thr
50 55 60

Thr Val Lys Thr Arg Tyr Val Val Met Asn Glu Glu Ile Leu Lys Lys
65 70 75 80

Tyr Pro Glu Leu Val Val Glu Gly Ala Ser Thr Val Lys Gln Arg Leu
85 90 95

Glu Ile Cys Asn Glu Ala Val Thr Gln Met Ala Ile Glu Ala Ser Gln
100 105 110

Val Cys Leu Lys Asn Trp Gly Arg Ser Leu Ser Asp Ile Thr His Val
115 120 125

Val Tyr Val Ser Ser Ser Glu Ala Arg Leu Pro Gly Gly Asp Leu Tyr
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Tyr Phe Ser Gly Cys Ser Gly Gly Val Ala Gly Leu Arg Val Ala Lys		
165	170	175
Asp Val Ala Glu Asn Asn Pro Gly Ser Arg Val Leu Leu Ala Thr Ser		
180	185	190
Glu Thr Thr Ile Ile Gly Phe Lys Pro Pro Ser Val Asp Arg Pro Tyr		
195	200	205
Asp Leu Val Gly Val Ala Leu Phe Gly Asp Gly Ala Gly Ala Met Ile		
210	215	220
Ile Gly Ser Asp Pro Val Phe Glu Thr Glu Thr Pro Leu Phe Glu Leu		
225	230	235
His Thr Ser Ala Gln Glu Phe Ile Pro Asp Thr Glu Lys Lys Ile Asp		
245	250	255
Gly Arg Leu Thr Glu Glu Gly Ile Ser Phe Thr Leu Ala Arg Glu Leu		
260	265	270
Pro Gln Ile Ile Glu Asp Asn Val Glu Gly Phe Cys Asn Lys Leu Ile		
275	280	285
Asp Val Val Gly Leu Glu Asn Lys Glu Tyr Asn Lys Leu Phe Trp Ala		
290	295	300
Val His Pro Gly Gly Pro Ala Ile Leu Asn Arg Val Glu Lys Arg Leu		
305	310	315
Glu Leu Ser Pro Gln Lys Leu Asn Ala Ser Arg Lys Ala Leu Met Asp		
325	330	335
Tyr Gly Asn Ala Ser Ser Asn Thr Ile Val Tyr Val Leu Glu Tyr Met		
340	345	350
Leu Glu Glu Lys Lys Ile Lys Lys Ala Gly Gly Asp Ser Glu		
355	360	365
Trp Gly Leu Ile Leu Ala Phe Gly Pro Gly Ile Thr Phe Glu Gly Ile		
370	375	380

sequence.txt

Leu Ala Arg Asn Leu Cys Ala
385 390

sequence.txt

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1653

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 <213> Trifolium repens

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	20				25				30						

Lys	Ala	Phe	Pro	Ala	Gln	Val	Leu	Pro	Gln	Glu	Cys	Leu	Val	Glu	Gly
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Phe	Ile	Arg	Asp	Thr	Lys	Cys	Asp	Asp	Thr	Tyr	Ile	Lys	Glu	Lys	Leu
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Glu	Arg	Leu	Cys	Lys	Asn	Thr	Thr	Val	Lys	Thr	Arg	Tyr	Thr	Val	Met
65					70				75		80				

Ser	Lys	Glu	Ile	Leu	Asp	Asn	Tyr	Pro	Glu	Leu	Ala	Ile	Asp	Gly	Thr
	85					90						95			

Pro	Thr	Ile	Arg	Gln	Lys	Leu	Glu	Ile	Ala	Asn	Pro	Ala	Val	Val	Glu
	100					105					110				

Met	Ala	Thr	Arg	Ala	Ser	Lys	Asp	Cys	Ile	Lys	Glu	Trp	Gly	Arg	Ser
115					120					125					

Pro	Gln	Asp	Ile	Thr	His	Ile	Val	Tyr	Val	Ser	Ser	Glu	Ile	Arg
	130				135					140				

Leu	Pro	Gly	Gly	Asp	Leu	Tyr	Leu	Ala	Asn	Glu	Leu	Gly	Leu	Asn	Ser
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Asp	Val	Asn	Arg	Val	Met	Leu	Tyr	Phe	Leu	Gly	Cys	Tyr	Gly	Gly	Val
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Thr	Gly	Leu	Arg	Val	Ala	Lys	Asp	Ile	Ala	Glu	Asn	Asn	Pro	Gly	Ser
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Arg	Val	Leu	Leu	Thr	Thr	Ser	Glu	Thr	Thr	Ile	Leu	Gly	Phe	Arg	Pro
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Pro Ser Lys Ala Arg Pro Tyr Asp Leu Val Gly Ala Ala Leu Phe Gly
 210 215 220

Asp Gly Ala Ala Ala Ile Ile Gly Thr Asp Pro Ile Leu Asn Gln
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Glu Ser Pro Phe Met Glu Leu Asn His Ala Val Gln Lys Phe Leu Pro
 245 250 255

Asp Thr Gln Asn Val Ile Asp Gly Arg Ile Thr Glu Glu Gly Ile Asn
 260 265 270

Phe Lys Leu Gly Arg Asp Leu Pro Gln Lys Ile Glu Asp Asn Ile Glu
 275 280 285

Glu Phe Cys Lys Lys Ile Met Ala Lys Ser Asp Val Lys Glu Phe Asn
 290 295 300

Asp Leu Phe Trp Ala Val His Pro Gly Gly Pro Ala Ile Leu Asn Lys
 305 310 315 320

Leu Glu Asn Ile Leu Lys Leu Lys Ser Asp Lys Leu Asp Cys Ser Arg
 325 330 335

Lys Ala Leu Met Asp Tyr Gly Asn Val Ser Ser Asn Thr Ile Phe Tyr
 340 345 350

Val Met Glu Tyr Met Arg Asp Tyr Leu Lys Glu Asp Gly Ser Glu Glu
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Leu Leu Arg Ser Leu
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 <212> DNA
 <213> Trifolium repens

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sequence.txt

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<212> PRT
<213> Trifolium repens

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Gln	Ala	Asp	Tyr	Pro	Asp	Tyr	Tyr	Phe	Arg	Ile	Thr	Asn	Ser	Glu	His
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sequence.txt

Met Thr Asp Leu Lys Glu Lys Phe Lys Arg Met Cys Asp Arg Ser Met
50 55 60

Ile Lys Lys Arg Tyr Met His Leu Thr Glu Asp Phe Leu Lys Glu Asn
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Pro Asn Met Cys Glu Tyr Met Ala Pro Ser Leu Asp Val Arg Arg Asp
85 90 95

Ile Val Val Val Glu Val Pro Lys Leu Gly Lys Glu Ala Ala Lys Lys
100 105 110

Ala Ile Cys Glu Trp Gly Gln Pro Lys Ser Lys Ile Thr His Leu Val
115 120 125

Phe Cys Thr Thr Ser Gly Val Asp Met Pro Gly Ala Asp Tyr Gln Leu
130 135 140

Thr Lys Leu Leu Gly Leu Lys Pro Ser Val Lys Arg Leu Met Met Tyr
145 150 155 160

Gln Gln Gly Cys Phe Ala Gly Gly Thr Val Leu Arg Leu Ala Lys Asp
165 170 175

Leu Val Glu Asn Asn Lys Asn Ala Arg Val Leu Val Val Cys Ser Glu
180 185 190

Ile Thr Ala Val Thr Phe Arg Gly Pro Ser Asp Thr His Leu Asp Ser
195 200 205

Leu Val Gly Gln Ala Leu Phe Gly Asp Gly Ala Ala Ala Met Ile Ile
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Gly Ala Asp Pro Asp Leu Thr Val Glu Arg Pro Ile Phe Glu Ile Val
225 230 235 240

Ser Ala Ala Gln Thr Ile Leu Pro Asp Ser Asp Gly Ala Ile Asp Gly
245 250 255

His Leu Arg Glu Val Gly Leu Thr Phe His Leu Leu Lys Asp Val Pro
260 265 270

Gly Ile Ile Ser Lys Asn Ile Glu Lys Ser Leu Val Glu Ala Phe Ala
275 280 285

Pro Ile Gly Ile Asn Asp Trp Asn Ser Ile Phe Trp Val Ala His Pro
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sequence.txt

290

295

300

Gly Gly Pro Ala Ile Leu Asp Gln Val Glu Glu Lys Leu His Leu Lys
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Glu Glu Lys Leu Arg Ser Thr Arg His Val Leu Ser Glu Tyr Gly Asn
 325 330 335

Met Ser Ser Ala Cys Val Leu Phe Ile Leu Asp Glu Met Arg Lys Arg
 340 345 350

Ser Lys Glu Glu Gly Met Ile Thr Thr Gly Glu Gly Leu Glu Trp Gly
 355 360 365

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 370 375 380

His Ser Val Pro Val Gln Gly
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			20				25				30				

Gly	Tyr	Ala	Val	Asn	Thr	Thr	Val	Arg	Asp	Pro	Asp	Ser	Pro	Lys	Lys
			35				40				45				

Ile	Ser	His	Leu	Val	Ala	Leu	Gln	Ser	Leu	Gly	Glu	Leu	Asn	Leu	Phe
50					55				60						

Arg	Ala	Asp	Leu	Thr	Val	Glu	Glu	Asp	Phe	Asp	Ala	Pro	Ile	Ala	Gly
65					70				75			80			

Cys	Glu	Leu	Val	Phe	Gln	Leu	Ala	Thr	Pro	Val	Asn	Phe	Ala	Ser	Gln
					85			90			95				

Asp	Pro	Glu	Asn	Asp	Met	Ile	Lys	Pro	Ala	Ile	Lys	Gly	Val	Leu	Asn
					100			105			110				

Val	Leu	Lys	Ala	Ile	Ala	Arg	Ala	Lys	Glu	Val	Lys	Arg	Val	Ile	Leu
					115			120			125				

Thr	Ser	Ser	Ala	Ala	Ala	Val	Thr	Ile	Asn	Glu	Leu	Lys	Gly	Thr	Gly
						130		135			140				

His	Val	Met	Asp	Glu	Thr	Asn	Trp	Ser	Asp	Val	Glu	Phe	Leu	Asn	Thr
145						150				155			160		

Ala Lys Pro Pro Thr Trp Gly Tyr Pro Ala Ser Lys Met Leu Ala Glu
 Page 13

sequence.txt
165 170 175

Lys Ala Ala Trp Lys Phe Ala Glu Glu Asn Asp Ile Asp Leu Ile Thr
180 185 190

Val Ile Pro Ser Leu Thr Thr Gly Pro Ser Leu Thr Pro Asp Ile Pro
195 200 205

Ser Ser Val Gly Leu Ala Met Ser Leu Ile Thr Gly Asn Asp Phe Leu
210 215 220

Ile Asn Ala Leu Lys Gly Met Gln Phe Leu Ser Gly Ser Leu Ser Ile
225 230 235 240

Thr His Val Glu Asp Ile Cys Arg Ala His Ile Phe Leu Ala Glu Lys
245 250 255

Glu Ser Ala Ser Gly Arg Tyr Ile Cys Cys Ala His Asn Thr Ser Val
260 265 270

Pro Glu Leu Ala Lys Phe Leu Asn Lys Arg Tyr Pro Gln Tyr Lys Val
275 280 285

Pro Thr Glu Phe Asp Asp Cys Pro Ser Lys Ala Lys Leu Ile Ile Ser
290 295 300

Ser Glu Lys Leu Ile Lys Glu Gly Phe Ser Phe Lys His Gly Ile Ala
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Glu Thr Phe Asp Gln Thr Val Glu Tyr Phe Lys Thr Lys Gly Ala Leu
325 330 335

Lys Asn

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taccaagggt cgtgtcctaa ttgtggagg aacaggtttc attggaaaat ttgtactga 180
ggcaagtctt tccacaacac acccaaccta cttgtgggtt cggccaggac ctcttcctc 240
ttcttaaggct gccacttcca aggcatttcca agagaaaaggc gccattgtca tttatggtcg 300

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atcttataac	accattaaga	ggttttgcc	ttcggaaat	tttgcacatg	ttggacagagc	480
aaatcctgtg	gaacctggcc	taacaatgt	caaacagaaa	cgtttggta	gacgtgtat	540
cgaagaatct	ggtataccat	acacctacat	ctgttgcatt	tcgatcgcat	cttggccgt	600
ctatgacaat	tgtcatccat	cacagttcc	tccaccgtt	gatcaattac	atatttatgg	660
tcatggcgat	gtcaaaagctt	actttgtga	tggctatgtat	atgggaaat	tcacaatgaa	720
ggtcattgtat	gatgaaagaa	caatcaacaa	aatatgttcat	tttcgacctt	ctaacaattg	780
ttatagcatg	aatgagcttgc	tttctttgt	ggaaaacaaa	attgcacgaa	aaattcctag	840
agtgtatcg	tctgaagacg	atcttcttagc	aatagccgca	gaaaattgca	taccggaaag	900
tgtcgtggca	ccaatcaactc	atgatatatt	catcaatgg	tgtcaagtt	acttcaagat	960
agatggaaatt	catgatgttgc	aaatggcac	tctatatctt	ggtgaatcg	taagaagttt	1020
ggaggaatgc	tatgagaaat	ttgttgcatt	ggccggctgac	aagattcata	aagaagaaac	1080
tggagttacc	gcaggtgggg	gcccacaac	ggctatggta	gagccggcgc	caatcacagc	1140
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gttgcattgttgc	ttttcaagaa	ttttcatca	tttcatgttgc	tttattatc	ctaagtacaa	1260
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 <213> Trifolium repens

<400> 12

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Gly Arg Val Leu Ile Val Gly Gly Thr Gly Phe Ile Gly Lys Phe Val
 20 25 30

Thr Glu Ala Ser Leu Ser Thr Thr His Pro Thr Tyr Leu Leu Val Arg
 35 40 45

Pro Gly Pro Leu Leu Ser Ser Lys Ala Ala Thr Ile Lys Ala Phe Gln
 50 55 60

Glu Lys Gly Ala Ile Val Ile Tyr Gly Arg Val Asn Asn Lys Glu Phe
 Page 15

sequence.txt

65	70	75	80
Met Glu Met Ile Leu Lys Lys Tyr Glu Ile Asn Val Val Ile Ser Ala			
85	90	95	
Ile Gly Gly Ser Asp Gly Leu Leu Glu Gln Leu Thr Leu Val Glu Ala			
100	105	110	
Met Lys Ser Ile Asn Thr Ile Lys Arg Phe Leu Pro Ser Glu Phe Gly			
115	120	125	
His Asp Val Asp Arg Ala Asn Pro Val Glu Pro Gly Leu Thr Met Tyr			
130	135	140	
Lys Gln Lys Arg Leu Val Arg Arg Val Ile Glu Glu Ser Gly Ile Pro			
145	150	155	160
Tyr Thr Tyr Ile Cys Cys Asn Ser Ile Ala Ser Trp Pro Tyr Tyr Asp			
165	170	175	
Asn Cys His Pro Ser Gln Leu Pro Pro Pro Leu Asp Gln Leu His Ile			
180	185	190	
Tyr Gly His Gly Asp Val Lys Ala Tyr Phe Val Asp Gly Tyr Asp Ile			
195	200	205	
Gly Lys Phe Thr Met Lys Val Ile Asp Asp Glu Arg Thr Ile Asn Lys			
210	215	220	
Asn Val His Phe Arg Pro Ser Asn Asn Cys Tyr Ser Met Asn Glu Leu			
225	230	235	240
Ala Ser Leu Trp Glu Asn Lys Ile Ala Arg Lys Ile Pro Arg Val Ile			
245	250	255	
Val Ser Glu Asp Asp Leu Leu Ala Ile Ala Ala Glu Asn Cys Ile Pro			
260	265	270	
Glu Ser Val Val Ala Pro Ile Thr His Asp Ile Phe Ile Asn Gly Cys			
275	280	285	
Gln Val Asn Phe Lys Ile Asp Gly Ile His Asp Val Glu Ile Gly Thr			
290	295	300	
Leu Tyr Pro Gly Glu Ser Val Arg Ser Leu Glu Glu Cys Tyr Glu Lys			
305	310	315	320

sequence.txt

Phe	Val	Val	Met	Ala	Ala	Asp	Lys	Ile	His	Lys	Glu	Glu	Thr	Gly	Val
325															335

Thr	Ala	Gly	Gly	Gly	Gly	Thr	Thr	Ala	Met	Val	Glu	Pro	Val	Pro	Ile
340															350

Thr	Ala	Ser	Cys
			355

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ggaaaatttgc	taacttgaggc	aagtctttcc	acaacacacc	caacctactt	tttgcggcg		240
ccaggaccc	ttctcttc	taaggctgccc	actattaagg	cattccaaga	gaaagggtgc		300
attgtcatttgc	atggcggttgc	aaataataag	gagttcatgg	agatgattttgc	aaaaaagtat		360
gagataatgc	tagtcatttc	tgcaatagga	ggctctgtat	gtttgtcgaa	acagcttact		420
tttgcggagg	ccatgaaatc	tattaacacc	attaagaggt	ttttgccttc	agaatttgc		480
cacgatgtgg	acagagcaaa	tcctgtggaa	cctggctaa	caatgtacaa	acagaaacgt		540
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atcgatccttgc	ggccgtacta	tgacaatttgc	catccatcac	agtttcttc	accgttggat		660
caatttacata	tttatggtca	ttggcgatgtc	aaagcttact	tttgcgtatgg	ctatgtatatt		720
ggggaaatttca	caatgaaagg	cattgtatgt	gaaagaacaa	tcaacaaaa	ttttgcattttgc		780
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gaatcggtaa	gaatgttgg	ggaatgttat	gagaaatttgc	tttgcgtatggc	ggctgacaag		1080
attcataaaag	aagaaactgg	agtttaccgc	ggggggggcg	gcacaacggc	tatggtagag		1140
ccgggtccaa	tcacagcttc	ctgttggaaa	ggttcacatgc	aggtggatat	tcttttgcgt		1200
cataagacat	gttggatgttgc	tttttttttttgc	tttgcactat	catgtgttttgc	tttttttttttgc		1260
attaatccata	agtacaaata	attgtgtctc	acgtacgttc	tttttttttttgc	aaatttgcgt		1320
tattctctat	tggggtaaaa	gttttgcgtat	tttttttttttgc	tttttttttttgc	tttttttttttgc		1380

sequence.txt

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aatggttaca caaaatatata aaaaaataa aaataagcaa aaaaaaaaaa aaaaaaaaaa 1500
aaaaaaaaaa gtactctgcg ttgttaccac tgcttaatca ctatgtgattt c 1551

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<213> Trifolium repens

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Gly Arg Val Leu Ile Val Gly Gly Thr Gly Phe Ile Gly Lys Phe Val
20 25 30

Thr Glu Ala Ser Leu Ser Thr Thr His Pro Thr Tyr Leu Leu Val Arg
35 40 45

Pro Gly Pro Leu Leu Ser Ser Lys Ala Ala Thr Ile Lys Ala Phe Gln
50 55 60

Glu Lys Gly Ala Ile Val Ile Tyr Gly Arg Val Asn Asn Lys Glu Phe
65 70 75 80

Met Glu Met Ile Leu Lys Tyr Glu Ile Asn Val Val Ile Ser Ala
85 90 95

Ile Gly Gly Ser Asp Gly Leu Leu Glu Gln Leu Thr Leu Val Glu Ala
100 105 110

Met Lys Ser Ile Asn Thr Ile Lys Arg Phe Leu Pro Ser Glu Phe Gly
115 120 125

His Asp Val Asp Arg Ala Asn Pro Val Glu Pro Gly Leu Thr Met Tyr
130 135 140

Lys Gln Lys Arg Leu Val Arg Arg Val Ile Glu Glu Ser Gly Val Pro
145 150 155 160

Tyr Thr Tyr Ile Cys Cys Asn Ser Ile Ala Ser Trp Pro Tyr Tyr Asp
165 170 175

Asn Cys His Pro Ser Gln Leu Pro Pro Pro Leu Asp Gln Leu His Ile
180 185 190

sequence.txt

Tyr Gly His Gly Asp Val Lys Ala Tyr Phe Val Asp Gly Tyr Asp Ile
 195 200 205

Gly Lys Phe Thr Met Lys Val Ile Asp Asp Glu Arg Thr Ile Asn Lys
 210 215 220

Asn Val His Phe Arg Pro Ser Asn Asn Cys Tyr Ser Met Asn Glu Leu
 225 230 235 240

Ala Ser Leu Trp Glu Asn Lys Ile Ala Arg Lys Ile Pro Arg Val Ile
 245 250 255

Val Ser Glu Asp Asp Leu Leu Ala Ile Ala Ala Glu Asn Cys Ile Pro
 260 265 270

Glu Ser Val Val Ala Ser Ile Thr His Asp Ile Phe Ile Asn Gly Cys
 275 280 285

Gln Val Asn Phe Lys Val Asp Gly Ile His Asp Val Glu Ile Gly Thr
 290 295 300

Leu Tyr Pro Gly Glu Ser Val Arg Ser Leu Glu Glu Cys Tyr Glu Lys
 305 310 315 320

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ggcaagtctt tccacaacac acccaaccta cttgttgggt cggccaggac ctctttctc	240	
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sequence.txt

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cgaagaatct ggtataccat acacccatgt ctgttgcatt tcgtatcgat ctggccgtt 600
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agtgtatgtc tctgaagacg atcttcttagc aatagccgca gaaaatttgc taccggaaag 900
tgtcgtggca ccaatcactt atgatatatattt catcaatggg tgtaatgtt aatcttcaatgt 960
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<212> PRT
<213> Trifolium repens

<400> 16
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1 5 10 15

Gly Arg Val Leu Ile Val Gly Gly Thr Gly Phe Ile Gly Lys Phe Val
20 25 30

Thr Glu Ala Ser Leu Ser Thr Thr His Pro Thr Tyr Leu Leu Val Arg
 35 40 45

Pro Gly Pro Leu Leu Ser Ser Lys Ala Ala Thr Ile Lys Ala Phe Gln
 50 55 60

Glu Lys Gly Ala Ile Val Ile Tyr Gly Arg Val Asn Asn Lys Glu Phe
 65 70 75 80

sequence.txt

Met Glu Met Ile Leu Lys Lys Tyr Glu Ile Asn Val Val Ile Ser Ala
 85 90 95

Ile Gly Gly Ser Asp Gly Leu Leu Glu Gln Leu Thr Leu Val Glu Ala
 100 105 110

Met Lys Ser Ile Asn Thr Ile Lys Arg Phe Leu Pro Ser Glu Phe Gly
 115 120 125

His Asp Val Asp Arg Ala Asp Pro Val Glu Pro Gly Leu Thr Met Tyr
 130 135 140

Lys Gln Lys Arg Leu Val Arg Arg Val Ile Glu Glu Ser Gly Ile Pro
 145 150 155 160

Tyr Thr Tyr Ile Cys Cys Asn Ser Ile Ala Ser Trp Pro Tyr Tyr Asp
 165 170 175

Asn Cys His Pro Ser Gln Leu Pro Pro Pro Leu Asp Gln Leu His Ile
 180 185 190

Tyr Gly His Gly Asp Val Lys Ala Tyr Phe Val Asp Gly Tyr Asp Ile
 195 200 205

Gly Lys Phe Thr Met Lys Val Ile Asp Asp Glu Arg Thr Ile Asn Lys
 210 215 220

Asn Val His Phe Arg Pro Ser Asn Asn Cys Tyr Ser Met Asn Glu Leu
 225 230 235 240

Ala Ser Leu Trp Glu Asn Lys Ile Ala Arg Lys Ile Pro Arg Val Ile
 245 250 255

Val Ser Glu Asp Asp Leu Leu Ala Ile Ala Ala Glu Asn Cys Ile Pro
 260 265 270

Glu Ser Val Val Ala Pro Ile Thr His Asp Ile Phe Ile Asn Gly Cys
 275 280 285

Gln Val Asn Phe Lys Ile Asp Gly Ile His Asp Val Glu Ile Gly Thr
 290 295 300

Leu Tyr Pro Gly Glu Ser Val Arg Ser Leu Glu Glu Cys Tyr Glu Lys
 305 310 315 320

Phe Val Val Met Ala Ala Asp Lys Ile His Lys Glu Glu Thr Gly Val
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sequence.txt

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<220>

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19

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sequence.txt

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sequence.txt

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<210> 33
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<220>
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<400> 33
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<400> 35
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<220>
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sequence.txt			
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sequence.txt

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sequence.txt		
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sequence.txt

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<210> 54
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<210> 55
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<220>
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<210> 56
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sequence.txt

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sequence.txt

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